Cardiac troponin as major mortality risk factor in SARS-CoV-2 infection

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Background: The COVID-19 pandemic has collapsed the health system, making it necessary to identify factors that help to predict and stratify the risk of patients on admission. Many factors have been used in clinical practice, but the scientific evidence available to date is limited.

Purpose: The objective of this study was to identify clinical and analytical predictors of 30-day mortality in SARS-CoV- 2 infection.

Methods: A total of 1708 consecutive patients hospitalized in our centre between 18th and 23rd March 2020 and 22nd August and 9th January 2021 with a confirmed microbiological diagnosis of COVID-19 by PCR were prospectively included. Cox regression analysis was performed to assess whether sex and race, smoking habit, chronic kidney disease, D-dimer, heart disease (defined as a history of acute myocardial infarction, heart failure, atrial fibrillation) and troponin at admission (cTnI levels greater than the 99th percentile of a healthy population) were related to the 30-day mortality of these patients.

Results: Baseline characteristic are shown in the table 1. Median hospital length of stay was 9 days (IQR 5 to 16). A total of 338 patients (19.8%) died within 30 days and 153 (9.0%) were admitted to the ICU. Furthermore, 52.1% of patients developed ARDS and 9.3% required non-invasive ventilation. A troponin at admission greater than the 99th percentile of a healthy population (HR 1.9, 95% CI 1.4–2.5, $p<0.001$) and a Charlson Comorbidity Index above 4 (HR 2.6, 95% CI 1.9–3.6, $p<0.001$) were independent predictors of 30-day mortality in patients admitted due to COVID- 19 infection.

Conclusions: At admission time, troponin values and patient comorbidity (Charlson Comorbidity Index ≥ 4) can be useful as prognostic markers of SARS-CoV-2 infection.

Variable	
Age (years)	68.8 (SD=16.5)
Weight (kg)	78.5 (SD = 16.4)
Height (m)	1.64 (SD 0.10)
Sex (% women)	42.4
Ischemic heart disease (%)	9.7
Smoke habit (%)	37.7
Hypertension (%)	52.7
Diabetes Mellitus	24.0
Chronic kidney disease	12.8

TABLE 1: *Baseline basal characteristics. SD: Standard deviation.*